

BIOM505-005: Qualifying Exam Prep Course
Friday, 11am-12pm, CFR 301 (Jan 24, 2020 – May 16, 2020)
1 Credit Hour

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Office hours by appointment. Please feel free to contact us with any questions, concerns or suggestions you have.

Course Description:

The goal of this course is to prepare 1st year BSGP students to take their qualifying exam. This course will offer students the opportunity to hone presentation and writing skills important for completing the qualifying exam. This class will be loosely based on topics from CMBD seminar and will provide additional structured feedback for experimental, specific aim and presentation design as it pertains to BSGP milepost exams.

BIOM505-005 runs for 16 weeks and meets on Fridays from 11:00AM-12:00PM in CRF 301 (online adaptation for COVID will be provided as necessary). Class participation is expected and will range from in class presentations to interactive lessons based on expanding both intellectual and personal skills in the context of the BSGP milepost exams. Skills gleaned from the course are designed to serve as a basis for student's ongoing scientific careers.

Student objectives within BIOM 505 are centered on building strong foundations in understanding and conveying scientific literature through summarization and presentation. Additionally, this course will train students in the proposal of future studies, grantsmanship and proposal design. BIOM 505 will focus on future study design, defense of proposed design and connecting concepts from BSGP core courses to broader literature.

Course Objectives:

1. Prepare students to quickly summarize and understand scientific literature.
2. Broadly describe strategies to summarize, organize, expand upon, question and present scientific literature.
3. Train students on identifying gaps in knowledge.
4. Provide strategies for developing a scientific rationale to study perceived gaps in knowledge.
5. Guide students on the application of BSGP core course material in proposal (Future Direction) writing.
6. Train students to handle questioning with logic, composure and patience.

Course Outcomes:

At the end of this course, students will be able to:

1. Convey important topics, methods and results in a timely manner when presenting.
2. Gain experience presenting scientific data and findings in a concise manner and to check for audience understanding.
3. Identify and define the "story" being told within scientific publications.
4. Identify the body of work surrounding a single publication and identify remaining areas for study.
5. Understand the anatomy and design of F-series specific aims.
6. Write and present F-series styled specific aims in a concise and clear manner.
7. Apply concepts from 507-508 to the literature at hand and to approach concepts and think through complex problems.

Grading:

90-100, A

80-89, B

70-79, C

60-69, D

0- 59, F

**Pluses and minuses will be assigned to letter grades at the course instructors' discretion.

Grading Breakdown:

30% Attendance

30% In-class participation

20% Summative Assessment (Completion based assignments)

20% Formative Assessment (Graded assignments)

Class Attendance:

Students are required to attend class. Students may be excused from class if appropriate documentation is provided to with of the instructors. Students will be allowed to miss **1** class, however additional absences may require completion of make-up assignments if attendance was excused. Excused absence must be discussed with the course instructor prior to the excused absence. Examples of excusable absence include: family or personal issues, illness, scientific conferences or presentations, ect... If you are uncertain about an excusable absence, please contact an instructor. Documentation may be required for excusal from class.

Class Participation:

Students will be asked to regularly participate in class through presentation, discussion and group work. Failure to attend class may diminish the value of class. Coming to class with an open mind and opinions on the topics at hand is encouraged, but please be respectful of your peers. Predatory criticism will not be tolerated! BIOM 505 should be an encouraging place to learn and practice essential scientific presentation skills.

Assignments:

BIOM 505 will contain a mix of participation and graded assignments both in class and outside of class. Due dates are generally the next class period unless otherwise stated. Many assignments outside of class will serve as the focus or jumping off point of the following class. Understand that failure to complete an assignment may extend beyond that particular grade and stem into class participation points.

Accommodation Statement

Accessibility Services (Mesa Vista Hall 2021, 277-3506) provides academic support to students who have disabilities. If you think you need alternative accessible formats for undertaking and completing coursework, you should contact this service right away to assure your needs are met in a timely manner. If you need local assistance in contacting Accessibility Services, see the Bachelor and Graduate Programs office.

Title IX Statement

A Note About Sexual Violence and Sexual Misconduct: As a UNM faculty member, I am required to inform the Title IX Coordinator at the Office of Equal Opportunity (oeo.unm.edu) of any report I receive of gender discrimination which includes sexual harassment, sexual misconduct, and/or sexual violence. You can read the full campus policy regarding sexual misconduct at <https://policy.unm.edu/university-policies/2000/2740.html>. If you have experienced sexual violence or sexual misconduct, please ask a faculty or staff member for help or contact the LoboRESPECT Advocacy Center.

Academic Integrity

The University of New Mexico believes that academic honesty is a foundational principle for personal and academic development. All University policies regarding academic honesty apply to this course. Academic dishonesty includes, but is not limited to, cheating or copying, plagiarism (claiming credit for the words or works of another from any type of source such as print, Internet or electronic database, or failing to cite the source), fabricating information or citations, facilitating acts of academic dishonesty by others, having unauthorized possession of examinations, submitting work of another person or work previously used without informing the instructor, or tampering with the academic work of other students. The University's full statement on academic honesty and the consequences for failure to comply is available in the University Catalog and in the Pathfinder.

Cell Phones and Technology

As a matter of courtesy, please turn off cell phones, pagers, and other communication and entertainment devices prior to the beginning of class. Notify me in advance if you are monitoring an emergency, for which cell phone ringers should be switched to vibrate.

BIOM 505-005 Contract

This syllabus serves as a contract between instructor and student. By returning to class on 1/31/2020 you agree to the terms of this contract and will be held to the standards described above. Please be aware that failure to follow the outlined guidelines, subsequent instruction and or involvement in activities that constitute academic dishonesty and Title IX breaches may end in failure of the class, academic probation, and SOM intervention.

COVID/Zoom Etiquette:

Students are expected to have their camera on at all times when in class. If you have a specific exception to be considered please submit this request prior to class.

Semester Outline:

Unit 1: Summarization of Scientific Papers in Written and Oral Practice.

Objectives:

1. Prepare students to quickly summarize and understand scientific literature.
2. Broadly describe strategies to summarize, organize, expand upon, question and present scientific literature.
3. Train students on identifying gaps in knowledge.

Week	Date	Topic
Week 1	1/22/2021	<ul style="list-style-type: none"> ○ Syllabus <ul style="list-style-type: none"> ▪ Brief overview of semester, expectations and guidelines. ○ In class exercise: What do you want out of BIOM 505-005? ○ Seven Sentence Summary Rubric <ul style="list-style-type: none"> ❖ Homework: Seven Sentence Summary on CMBD publication. (UNM Learn) ❖ Homework: On your own come up with an alternative title for the publication using you OWN words! <ul style="list-style-type: none"> ○ All Homework is due 9pm the Thursday before class!
Week 2	1/29/2021	<ul style="list-style-type: none"> ○ Seven Sentence Summary Peer Review. ○ Seven Sentence Summary Discussion: What makes a clear summary? ○ Concept Timelines: What are they and how they can help? ○ Didactic: Choosing an article for the exam and using summaries to do so. <ul style="list-style-type: none"> ❖ Homework: Select a paper from the 3 assigned paper provided to you in UNM learn. <ul style="list-style-type: none"> ○ Choose wisely you will use this throughout the semester!!!! ❖ Homework: SSS of one of 3 scientific articles with title in your OWN words. (UNM Learn)
Week 3	2/5/2021	<ul style="list-style-type: none"> ○ 10 minutes: Paper Selection Discussion ○ Didactic: BSGP Milepost Exams and expectations. Elements of summarization and how it relates to these exams. ○ Brain map exercise individually thinking about your personal skills and weaknesses from 507/508. ○ Didactic: Conceptual vs interpersonal brain maps. How to use them to your advantage. <ul style="list-style-type: none"> ❖ Homework: CMBD presentation assignment: <ol style="list-style-type: none"> 1. Come up with 5 keyword for the presentation. 2. Generate an alternative title for the presentation (again in your OWN words) 3. Generate a concept brain map for the presentation. 4. 3 Sentence on general presentation skills including the presenters pacing organization slide design and what you thought was engaging or things you will avoid. ❖ Homework: Prepare 5-7 PowerPoint slides introducing the paper you selected. (Concept Brain Map Introduction)
Week 4	2/12/2021	<ul style="list-style-type: none"> ○ 5 minutes: Muddy Point Discussion ○ In class presentation skills exercise. <ul style="list-style-type: none"> ▪ Off the cuff elevator speeches on Brain-Mapped presentation you created. ▪ In class constructive feedback and discussion. ○ Didactic: Presenting Results and Data <ul style="list-style-type: none"> ❖ Homework: Prepare 5-7 results/methods slides to add to your Introduction PowerPoint on the of the paper you chose from Week 2. ❖ Homework: Take notes on the CMBD presenter and presentation and identify elements you liked and disliked. Provide your reasoning.
Week 5	2/19/2021	<ul style="list-style-type: none"> ○ Draw a summary diagram for the paper you chose in class. ○ Chalk-talks <ul style="list-style-type: none"> ▪ 1 ½ minute chalk talks on the paper of your choosing including a diagram of the "story." ❖ Homework: Prepare conclusions and critiques slides

		<p>for your ongoing PowerPoint presentation on your selected paper.</p> <ul style="list-style-type: none"> ❖ Homework: Take notes on the CMBD presenter and presentation and identify elements you liked and disliked. Provide your reasoning.
Week 6	2/26/2021	<ul style="list-style-type: none"> ○ Critiques: The Do's and Don'ts ○ Individual identification of key critiques followed by class discussion. ❖ Homework: CMBD presentation notes. ❖ Homework: Read comprehensive exam specific aims examples. ❖ Homework: Re-evaluate your mock qual presentation. Expand all sections so that you are comfortable with the flow and design (Intro 10 slides, M&M 15 slides, Critiques and Conclusion 4 slides)

Unit 1: Outcomes:

1. Convey important topics, methods and results in a timely manner when presenting.
2. Become comfortable presenting scientific data and findings in a concise manner and to check for audience understanding.
3. Be able to identify and express the "story" being told within scientific publications.
4. Be able to comprehend the body of work surrounding a single publication and identify remaining areas for study.

Unit 2: Goals:

1. Provide strategies for developing a scientific rationale to study perceived gaps in knowledge.
2. Guide students on the application of BSGP core course material in proposal (Future Direction) writing.
3. Train students to handle questioning with logic, composure and patience.

Week	Date	Topic
Week 7	3/5/2021	<u>Cancelled!!!!</u>
Week 8	3/12/2021	<ul style="list-style-type: none"> ○ Anatomy of Future Direction <ul style="list-style-type: none"> ▪ Scientific Rationale vs. Scientific Premise ▪ Hypothesis ○ Rationale and Specific Aims <ul style="list-style-type: none"> ▪ Break down of student comprehensive exams ▪ Definition of Research Question vs Hypothesis ❖ Homework: Define the gap you intend to fill for you Mock Qual presentation. ❖ Homework: Write/draw a concept map for an F31 styled future direction.
Week 9	3/26/2021	<ul style="list-style-type: none"> ○ Writing a Specific and Testable Specific Aim <ul style="list-style-type: none"> ▪ Student examples of a specific aim ▪ Conscientious experimental design that serves to further the field regardless of outcome ❖ Homework: Write an F31 styled specific aim following the format of student examples. ❖ Homework: Draft 3-5 slides for your FD rationale.

Week10	4/2/2021	<ul style="list-style-type: none"> ○ Fast and Furious Future Directions <ul style="list-style-type: none"> ▪ 2-3 minute presentation detailing the Rationale, “idea” and hypothesis of a future direction based on the mock qual paper. ▪ Feedback from the class and instructor on presentation. ❖ Homework: Draft the hypothesis and aim slides (1-2 Aims with subaims) for your mock FD qual idea.
Week 11	4/9/2021 GREG	<ul style="list-style-type: none"> ○ From Writing to Presenting <ul style="list-style-type: none"> ▪ Comprehensive exam presentation example ○ Creating and planning aspects of a Future Direction <ul style="list-style-type: none"> ▪ Idea, Hypothesis, Specific Question, Expected Results, Experimental Design ❖ Homework: Assemble FD slides including detailed experimental design slides with expected outcomes of the experiments and alternative approaches.
Week 12	4/16/2021	<ul style="list-style-type: none"> ○ Qual Question Session <ul style="list-style-type: none"> ▪ Volunteers from the BSGP cohort will read and design a slew of question to ask students. ▪ Will occur over next 2 weeks! ❖ Homework: Please read and prepare yourself by re-familiarizing yourself with your paper and the general concepts therein.
Week 13	4/23/2020	<ul style="list-style-type: none"> ○ Qual Question Session <ul style="list-style-type: none"> ▪ Volunteers from the BSGP cohort will read and design a slew of question to ask students. ▪ Will occur over next 2 weeks! ❖ Homework: Begin working on you Mock Qual and correspond with me to set up a time to complete your presentation and receive feedback.
Week 14	4/30/2021	<ul style="list-style-type: none"> ○ Mock Qual <ul style="list-style-type: none"> ▪ Volunteers from the BSGP cohort will read sit in on your Mock qual. ▪ Please prepare all parts of the qualifying exam so that this is a comprehensive practice.
Week 15	5/7/2021	<ul style="list-style-type: none"> ○ Mock Qual <ul style="list-style-type: none"> ▪ Volunteers from the BSGP cohort will read sit in on your Mock qual. ▪ Please prepare all parts of the qualifying exam so that this is a comprehensive practice.

Unit 2: Outcomes:

1. Students should be able to write and orate F-series styled aims.
2. Be able to design, defend and describe future studies and how they will contribute to the field.
3. Understand the story the data tells readers and the logical progression within publications.
4. Present an entire qualifying exam styled presentation.